

Mass-market GLONASS Applications

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2012: Multi-constellation – global standard

Multi-constellation in space

GPS



- Global system – market standard

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GLONASS



- Global system since 8 Dec. 2011

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Galileo



- Launch of 2 satellites (October 2011) and their commissioning

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Compass



- Test mode as a regional system since December 2011



Multi-constellation on earth

before 2010

- GLONASS/GPS – only Russian producers
- Only for motor transport (2010 – 100 thousand psc)



2011

- All world leaders announced about working on GLONASS/GPS chipsets
- All world leaders announced about GLONASS/GPS equipment production for different purpose



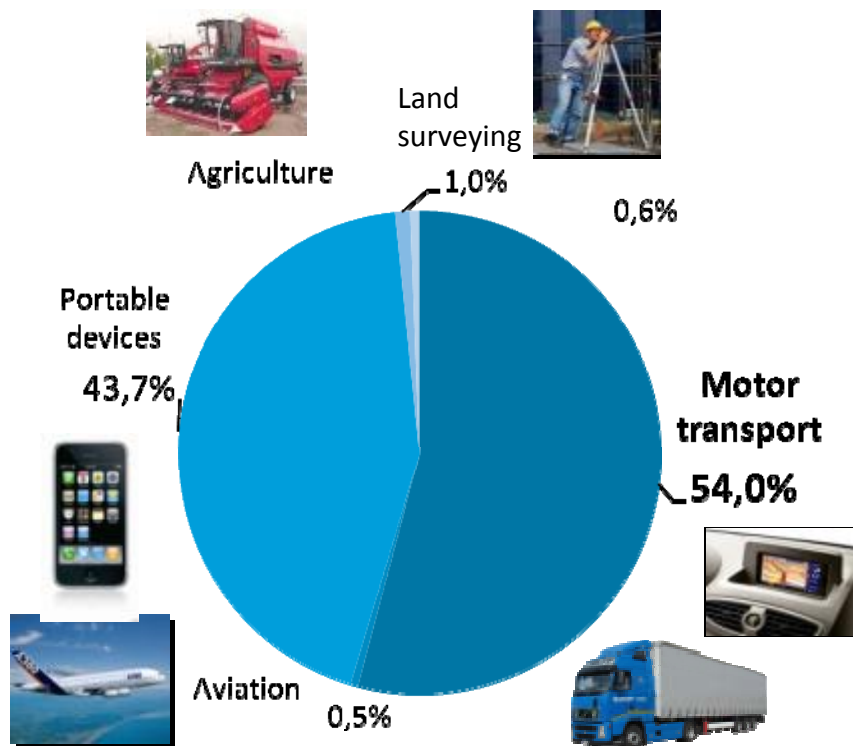
since 2012

- GLONASS/GPS – mass-market standard in all price segments

Navigation market: forming, fast growing, global, high-tech

World navigation market 2011 more than \$100 bln

Industry segments 2011-2020 rr.



Source: European commission, May 2012

Growth drivers of the Russian market:

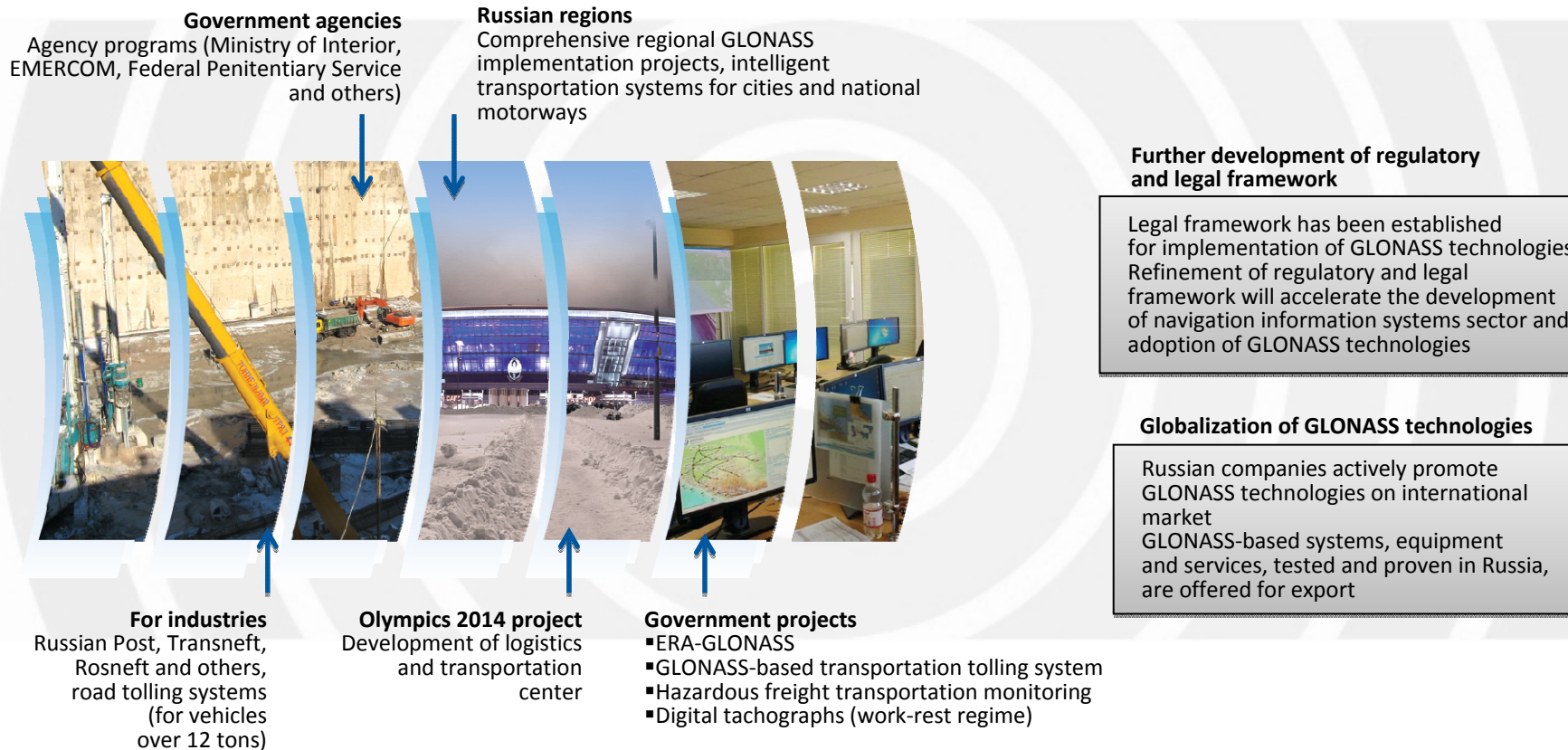
1. Major state and industry projects: «ERA-GLONASS», equipping of passenger transport, Ministry of the Interior of Russia, “Russian Post” transport, Transneft

2. Regional projects: regional special-purpose programs (PHIC, school busses, emergency ambulance, housing and utilities infrastructure), Intelligent Transport Systems (ITS Moscow), etc.

3. Consumer navigation: systems, equipment and services for car drivers, passengers and foot passengers

Basic conditions for implementation of navigation technologies have been provided : legislative framework, prepared and approved industry solutions for different tasks

Development and implementation of GLONASS-based technologies



GLONASS/GPS technologies should be used for modernization of transport system and transportation security

Size of the problem 2011:
damage from road accidents - 2,5 % GDP, 27 953 people died

Systems in interest of safety

- State system «ERA-GLONASS»
after 12.2013 - 40 mio vehicles
- Monitoring system of dangerous, bulky and heavy-weight cargo transportation
after 2013 - 150 thousand vehicles
- Control and dispatch systems (regional, urban)
- Drivers' schedule of work and rest control system (digital tachographs)
after 2013 - 900 thousand vehicles
- Police patrol /EMERCOM monitoring and control systems
after 2015 - 5 mio vehicles

- Heavy truck tolling system
since 2011 - 200 thousand vehicles
- Intelligent transport systems and transport streams
after 2014 - 1,5 mio vehicles



Systems in interest of effectiveness

13 megapolis, 19 cities with a population more than 500 thousand people



Commercial potential: prepared service platform and the most popular navigation device

ERA-GLONASS

Safety and security on the roads

Social effect: 4 thousand saved lives annually

Testing: since 12/2011
Operation: after 12/2013



State service consumers:
Drivers and passengers



Tolling systems

Fair recovery of damages

Economic effect:
Replenishment of Federal and regional road funds

Testing: since 12/2012
Operation: after 07/2014



State service consumers (1st stage):
1,5 mio trucks (> 12 tonnes)



Insurance telematics

Social effect:
Road discipline growth

Testing: since 9/2012
In the market: after 6/2013



Commercial service consumers:
cars' owners

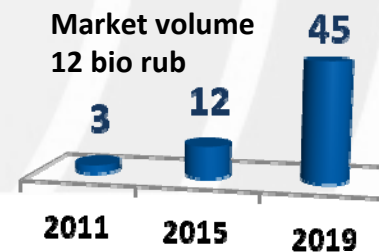


Services for car drivers

Ease and comfort on the road

Economic effect: new big market

Testing: after 10/2012
In the market: after 8/2013



Commercial service consumers:
cars' owners



Industry solutions

Precision farming

Agriculture with GNSS:

- 10% annual income increase
- 52% fuel cost reduction
- 67% labor cost reduction



High-precision integrated sensors

- Observation and control of forest fire danger
- Forest crime monitoring
- Identification of areas of low, medium and high forest pathology threat



Control systems for mining equipment

- > 12% increase of traffic volume
- 8% fuel consumption reduction
- 50% downtime reduction



Signal-searching device with self-contained power supply

- Signal-searching device sends signals on a user's mobile phone or to the dispatch center while attempting to open the property or to take away the device.



Most mobile devices already have functions of satellite navigation



Navigation helmet for bikers

Photo and video cameras



Tourist navigator with a satellite communication channel



Navigation gadget for golf playing



Ski sunglasses



Navigation tracker for sport shoes



Baggage tracker



Tracker for animals

Coming soon
«Google glasses»



Satellite navigation for children and handicapped people

Navigation for wheelchair users



I know how to get there!



Voice and tactile navigation for visually impaired people



Ease of movement!

Children, sick and elderly relatives monitoring



We ALWAYS know where our family and friends are!

Telemedicine (patient's monitoring)

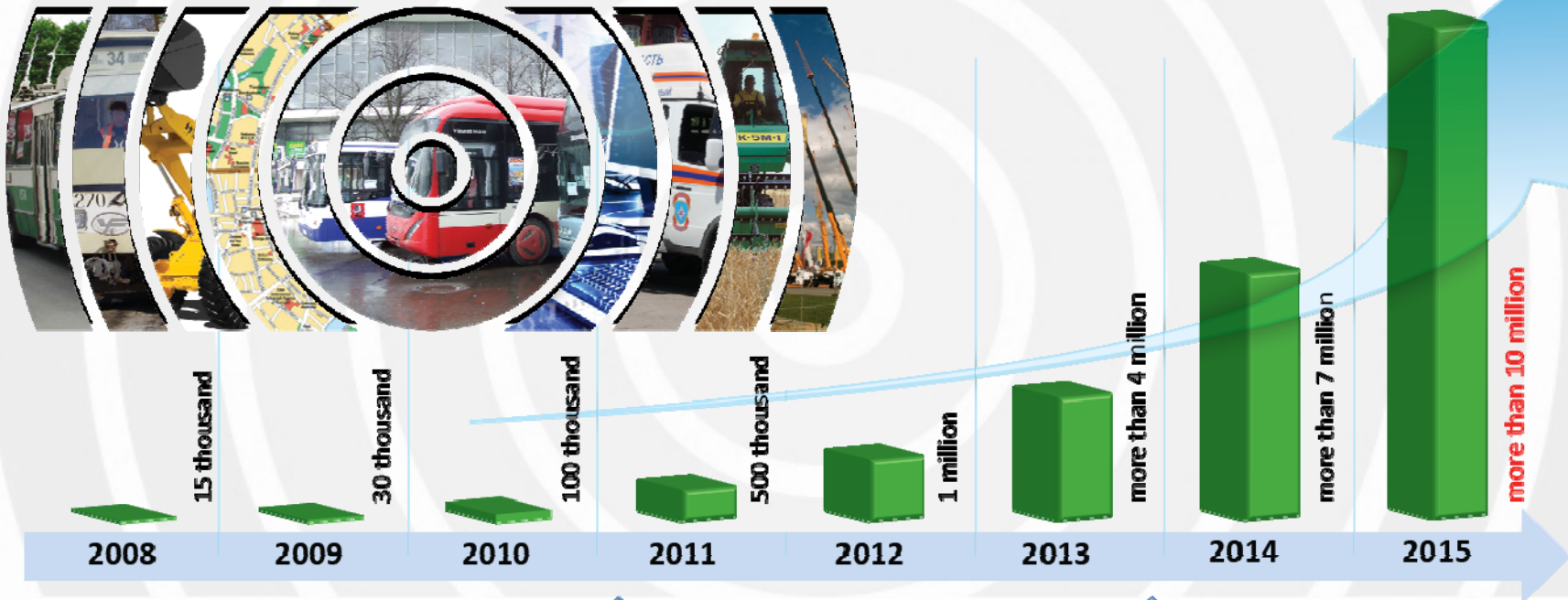


Help will come on time!

Navigation services provide additional safety and improvement of quality of life of the least socially protected groups

Effects on domestic GLONASS technology market

Demand for GLONASS-based equipment



Launch of large-scale GLONASS implementation projects

ERA GLONASS system begins operation

GLONASS-based projects and programs create a multiplicative effect on growth in Russian innovation sector, and contribute to greater efficiency in various sections of national and regional economy.



NIS national navigation
services provider
GLONASS

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